

HERPETOLOGY.—*Contributions to the herpetology of Maryland and Delmarva, 12: The herpetofauna of Anne Arundel County, Md.* CLYDE F. REED, Baltimore, Md. (Communicated by Doris M. Cochran.)

(Received November 13, 1956)

Anne Arundel County lies mainly on the Inner Coastal Plain in Maryland. The main Piedmont tributaries that bound the county are the Patapsco River on the north and the Upper Patuxent River on the west and southwest. On the east the county is bounded by the Chesapeake Bay, in from which several tidal rivers flow, as the Severn, Magothy, South, and West Rivers. Each of these rivers has its headwaters within the coastal soils of Anne Arundel County. Other than the meager Piedmont areas where Anne Arundel, Howard, and Prince Georges Counties come together, the ecological habitats are typically coastal. Pitcher-plant, cranberry, and sphagnum bogs are not infrequent in the northeast-central areas of the county, as Lake Shore, Mount Carmel Lake, Lake Waterford, and the headwaters of Severn.

The author has collected the herpetofauna in Anne Arundel County since 1936, when he collected *Eumeces laticeps* and *Chelydra serpentina* at Mount Carmel Lake, near Lake Shore.

New to the county are the author's and Daffin's records for *Pseudemys rubriventris* (1088); *Desmognathus fuscus* (876); *Pseudotriton ruber* (210-211, 504-505, 916-928); *Scaphiopus holbrooki* (1077-80); *Hyla crucifer* (Daffin 242); *Rana pipiens* (509; Daffin 41, 517, 136, 560); *Rana sylvatica* (13); *Gratemys geographica* (Daffin 388). Of course, I realize there may be specimens for many of these species in private and public collections, but their presence has not been published, and so the present list constitutes the first published record for some of these species in this county.

I wish to thank Dr. Doris Cochran, of the United States National Museum, for the use of the data and the specimens from Anne Arundel County. Also, I wish to thank Ralph Daffin and Donald Linzey, two young Baltimore herpetologists, for enabling me to study and cite their specimens from

this county. In the combined collections annotated below, there are 47 species of herptiles represented in Anne Arundel County, Md.

1. *Desmognathus fuscus fuscus* (Green): Dusky salamander. Lake Waterford, along stream, May 26, 1954, *Reed* 876.

2. *Plethodon cinereus cinereus* (Green): Wood or red-backed salamander. South River (Fowler, Copeia 1925, No. 145: 62), woods near Solley, May 21, 1953, *Reed* 218-219; woods near Brooklyn. May 21, 1953, *Reed* 243; woods 2½ miles northwest of Friendship Airport, September 25, 1953, *Reed* 6-12; woods 1 mile south of Mountain Road on Ritchie Highway, March 7, 1954, *Daffin* 64.

3. *Pseudotriton ruber ruber* (Sonnini): Red salamander. Wet woods near Solley, May 21, 1953, *Reed* 210-211; August 7, 1953, *Reed* 504-505; under logs, 2 miles south of Glenburnie, June 25, 1954, *Reed* 926-928; Glenburnie, June 15, 1955, *Daffin* 376; Priests Bridge (U.S.N.M. 101426; 101427-8).

4. *Ambystoma maculatum* Shaw: Spotted salamander. Harwood (U.S.N.M. 103740).

5. *Ambystoma opacum* (Gravenhorst): Marbled salamander. Stine (Maryland Nat. 23(1-2): 77. 1953, no specimens cited).

6. *Scaphiopus holbrooki holbrooki* (Harlan): Spadefoot toad. Edgewater, July 21, 1956, *Daffin* 541; west of Owings, July 22, 1956, *Reed* 1077-1080; 1.5 miles south of U.S. Highway 50 on Maryland Route 2, near Edgewater, July 21, 1956, *Daffin* 543; along U.S. Highway 50 at Maryland Route 2, July 21, 1956, *Daffin* 544.

7. *Bufo woodhousei fowleri* Hinckley: Fowler's toad. Swampy area near stream, ¼ mile south of Harundale, June 10, 1954, *Daffin* 133; along U.S. Highway 301, 1 mile north of Priests Bridge, July 14, 1956, *Daffin* 519, *Linzey* 148-151; west of Owings, July 22, 1956, *Reed* 1076.

8. *Acris gryllus gryllus* (Le Conte): Cricket frog. Patuxent River (U.S.N.M. 101222); Defense Highway near Bowie (U.S.N.M. 101220-1); along U.S. Highway 301, 1 mile north of Priests Bridge, July 14, 1956, *Daffin* 518, *Linzey* 142-144.

9. *Acris gryllus crepitans* Baird: Cricket frog. Woods near Solley, May 21, 1953, *Reed* 282; pond at Alpine Beach, near Fort Smallwood,

October 16, 1953, *Daffin* 32; July 24, 1956, *Daffin* 563; Lake Shore near Mountain Road, October 16, 1953, *Daffin* 33 and *Linzey* 5-10; Pinehurst near Gibson Island, April 2, 1955, *Daffin* 243; sand pits 1 mile north of Priests Bridge, May 10, 1954, *Reed* 766-770; August 4, 1956, *Reed* 1183-1190; July 14, 1956, *Linzey* 145-147.

10. *Hyla cinerea* (Schneider): Green tree frog. Ritchie Highway between Magothy and Severn Rivers, July 1956 (reported to author by Robert Simmons; also reported to author from Anne Arundel County by Dr. Doris Cochran).

11. *Hyla crucifer crucifer* Wied: Spring peeper. Pinehurst near Gibson Island, April 2, 1955, *Daffin* 242.

12. *Hyla versicolor versicolor* LeConte: Common tree frog. Millersville (Noble and Hassler, Copeia 1936(1): 63-64); Priests Bridge, *Brown, Aschmeier, & East*, May 1936 (U.S.N.M. 101429-32); 1.8 mile south of Route 214 on Maryland Route 2, July 21, 1956, *Daffin* 540; Edgewater, 6 miles south of Annapolis, July 21, 1956, *Daffin* 542.

13. *Rana catesbeiana* Shaw: Bull frog. Maryland Beach near Fort Smallwood, July 28, 1956, *Daffin* 566; Rhodes River (Fowler, Copeia 1925, No. 145: 62); Pinehurst near Gibson Island, Apr. 2, 1955, *Daffin & Reed*; Laurel (U.S.N.M. 36091 and 26320-22).

14. *Rana clamitans* Latreille: Green frog. Along Old Annapolis Road, April 18, 1953, *Reed* 482; woods near Sherwood Forest, June 7, 1953, *Reed* 288; woods near Solley, May 21, 1953, *Reed* 286; along Severn River and Dicus Mill Road, summer 1953, *Reed* 488; May 26, 1954, *Reed* 877; Mount Carmel Lake, Lake Shore, August 7, 1953, *Reed* 510; September 16, 1953, *Linzey* 11; stream south of Harundale, June 10, 1954, *Daffin* 134, 137-143; Priests Bridge (U.S.-N.M. 101433); 1.5 mile north of Priests Bridge, July 14, 1956, *Linzey* 154; along U.S. Highway 301, 2 miles south of Conway, July 14, 1956, *Daffin* 520; west of Owings, July 22, 1956, *Reed* 1074-75; Alpine Beach near Fort Smallwood, July 24, 1956, *Daffin* 561; Muddy Creek (Fowler, Copeia 1925, No. 145: 62).

15. *Rana pipiens pipiens* Schreber (incl. *sphenocephala*): Leopard frog. Mount Carmel Lake, Lake Shore, August 7, 1953, *Reed* 509; Patapsco River near Old Annapolis Road, Aug. 31, 1953, *Daffin* 41; U.S. Highway 301, 1-1.5 miles north of Priests Bridge, May 10, 1954, *Reed* 771; July 14, 1956, *Daffin* 517, *Linzey* 152-153; stream south of Harundale, June 10, 1954, *Daffin* 136; August 11, 1956, *Linzey* 197;

Alpine Beach near Fort Smallwood, July 24, 1956, *Daffin* 560.

16. *Rana palustris* LeConte: Pickerel frog. Stream south of Harendale, June 10, 1954, *Daffin* 135; Muddy Creek (Fowler, Copeia, 1925, No. 146: 62).

17. *Rana sylvatica* LeConte: Wood frog. Woods, 2½ miles northwest of Friendship Airport, September 25, 1953, *Reed* 13.

18. *Cnemidophorus sexlineatus sexlineatus* (Linnaeus): Six-lined skink or racerunner. Sandy woods 2 miles south of Glenburnie, June 25, 1954, *Reed* 925; McCauley, 1945: Bodkin Point, Camp Linstead, Fort Smallwood, Furnace Branch near Glenburnie, Lake Shore, Priests Bridge, Severna Park.

19. *Sceloporus undulatus hyacinthinus* (Green): Fence swift. On pine tree, Mount Carmel Lake, Lake Shore, June 25, 1954, *Reed* 929; common in woods near Friendship Airport, June 1955, *Reed*; mouth of Barrow Creek (Fowler, Copeia 1925, No. 145: 63); McCauley, 1945: Annapolis, 3 miles southwest of Annapolis, Camp Linstead, Crownsville, Fort Armstead, Fort Smallwood, Glenburnie, Lake Shore, Round Bay, Severna Park.

20. *Eumeces fasciatus* (Linnaeus): Five-lined skink. Near Priests Bridge, pinewoods, May 10, 1954, *Reed* 765; Annapolis (A.M.N.H.); McCauley, 1945: Annapolis, 11 miles north of Annapolis, Lake Shore, Priests Bridge, Severna Park; Severn Run Bridge at U.S. Highway 301, July 21, 1956, *Linzey* 167.

21. *Eumeces laticeps* (Schneider): Greater five-lined skink. Lake Shore, summer 1936, *Reed*; McCauley, 1945: Indian Landing, Lake Shore, Severna Park, Shore Acres near Arnold.

22. *Carphophis amoenus amoenus* (Say): Worm snake. Along Severn River, under logs, west of Annapolis, September 7, 1953, *Reed* 1-3; woods near Mount Carmel Lake, July 16, 1956, *Reed* 1167; Joyce Lane, near Briar Cliff-on-Severn, August 11, 1956, *Daffin* 573; McCauley, 1945: Camp Linstead, Crownsville, Little Round Bay, Priests Bridge, Severna Park.

23. *Diadophis punctatus edwardsi* (Merrem): Ring-necked snake. South River (Fowler, Copeia 1925, No. 145: 63); McCauley, 1945: Camp Linstead near Laurel, Montevideo.

24. *Heterodon platyrhinos platyrhinos* Latreille: Hog-nosed snake. McCauley, 1945: Anne Arundel County, without definite records.

25. *Opheodrys aestivus* (Linnaeus): Rough green snake. McCauley, 1945: Camp Linstead, Crownsville, Glenburnie, Lake Shore, Little Round Bay Creek, Severn River, Severna Park near Stoney Run.



26. *Coluber constrictor constrictor* (Linnaeus): Black racer. Mouth of Barrow Creek (Fowler, Copeia 1925, No. 145: 63); McCauley, 1945: Anne Arundel County, without definite records.
27. *Elaphe guttata* (Linnaeus): Corn snake. McCauley, 1945: Briar Cliff-on-Severn near Arnold, Wardaur on Severn River near Annapolis.
28. *Elaphe obsoleta obsoleta* (Say): Pilot black snake. McCauley, 1945: Anne Arundel County, without definite records; Jessup record near Anne Arundel-Prince Georges County boundary.
29. *Lampropeltis getulus getulus* (Linnaeus): King snake. McCauley, 1945: Near Annapolis Junction; Camp Linstead; Crownsville; near Glenburnie; Indian Landing; Lake Shore; Severn; near Severn River; Severna Park.
30. *Lampropeltis calligaster rhombomaculata* (Holbrook): Brown king snake or mole snake. McCauley, 1945: near Annapolis Junction (UM); road between Millersville and Odenton (U.S.N.M. 108753).
31. *Lampropeltis dohiana triangulum* (Lacépède): Milk snake. McCauley, 1945: near Laurel; intermediates between *triangulum* and *temporalis*: Annapolis; near Round Bay on Severn River (JHU).
32. *Cemophora coccinea* (Blumenbach): Scarlet snake. McCauley, 1945: St. Margaret's (Steg-neger, 1905); Mill Creek, June 8, 1947, Dr. Phillip A. Butler (U.M.); see Littleford, Herpetologica 11: 104. 1955.
33. *Natrix sipedon sipedon* (Linnaeus): Common water snake. Along Severn River near Annapolis, June 4, 1953, Reed 487; ¼ mile south of Harundale, Ritchie Highway, June 10, 1954, Daffin 132; Alpine Beach near Fort Smallwood, July 24, 1956, Daffin 562; Priests Bridge, July 22, 1956, Reed; McCauley, 1945: Anne Arundel County, without definite records; mouth of Barrow Creek (Fowler, Copeia 1925, No. 145: 63).
34. *Natrix septemvittata* (Say): Queen snake. Along Patapsco River near Linthicum, June 11, 1953, Reed 293; McCauley, 1945: Annapolis; Camp Linstead; Sawmill Creek, 1 mile north of Glenburnie.
35. *Storeria dekayi* (Holbrook): DeKay's snake. McCauley, 1945: Anne Arundel County, without definite records.
36. *Haldea valeriae valeriae* Baird and Girard: Eastern ground snake. Woods under log, near Brooklyn, May 21, 1953, Reed 4; McCauley, 1945: near Marley Creek; Severna Park; near Annapolis.
37. *Thamnophis sirtalis sirtalis* (Linnaeus): Garter snake. McCauley, 1945: Anne Arundel County, without definite records, map 32.
38. *Thamnophis sauritus sauritus* (Linnaeus): Ribbon snake. McCauley, 1945: Camp Linstead; Furnace Branch; map 31.
39. *Ancistrodon contortrix mokeson* (Daudin): Copperhead. Woods near Sherwood Forest, summer 1953, Reed 466; McCauley, 1945: Briar Cliff-on-Severn near Arnold; Crownsville; Lake Shore; map 33.
40. *Sternotherus odoratus* Latreille: Musk turtle. McCauley, 1945: Anne Arundel County, without definite records, map 35 (Brooklyn).
41. *Kinosternon subrubrum subrubrum* (Lacépède): Mud turtle. Magothy River, 1935, Reed; McCauley, 1945: Glenburnie; Lake Shore; North River and Defense Highway; Priests Bridge; Severna Park, South River, 3 miles southwest of Annapolis.
42. *Chelydra serpentina serpentina* (Linnaeus): Snapping turtle. Severn River, near Sherwood Forest, west of Annapolis, June 7, 1953, several caught. Reed 1247; DOR, east of Laurel at Patuxent River, June 13, 1956, Reed; mouth of Barrow Creek (Fowler, Copeia 1925, No. 145: 64); McCauley, 1945: Anne Arundel County (Laurel), map. 37; Mount Carmel Lake, summer 1936, Reed.
43. *Clemmys guttata* (Schneider): Spotted turtle. DOR, just south of Annapolis Junction, Baltimore-Washington Parkway, June 4, 1954, Reed 910; McCauley, 1945: Camp Linstead; Crownsville; Glenburnie; near Harmans; Lake Shore; Priests Bridge; map. 38.
44. *Terrapene carolina carolina* (Linnaeus): Common box turtle. Friendship Airport, June 20, 1956, DOR, Reed; near Chesapeake Bay Bridge, DOR, July 13, 1956, Reed; North River along U.S. Highway 50, July 22, 1956, Reed; U.S. Highway 301 near Millersville, July 14, 1956, Daffin 516; Joyce Lane near Briar Cliff-on-Severn, August 11, 1956, Daffin 574; McCauley, 1945: Anne Arundel County, without definite records, map 41; woods near Friendship in southern Anne Arundel County, July 22, 1956, Reed 1245.
45. *Graptemys geographica* (LeSueur): Map turtle. Alpine Beach near Fort Smallwood, August 5, 1955, Daffin 388; Bodkin Point, Daffin.
46. *Chrysemys picta picta* (Schneider): Painted turtle. Pond at Maryland Beach near Fort Smallwood, July 16, 1954, Daffin 167; McCauley, 1945: Anne Arundel County, without definite records, map 44; Brooklyn, May 15, 1953, Reed 277.
47. *Pseudemys rubriventris* (LeConte): Red-bellied terrapin. DOR, North River and U.S. Highway 50, July 22, 1956, Reed 1088—new to Anne Arundel County.